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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): 071469-0307558

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450". [37 CFR 1.8(a)]

on _____

Signature _____

Typed or printed name _____

Application Number	Filed
10/812,347	March 30, 2004

First Named Inventor: FUMIHIKO HIGUCHI

Art Unit	Examiner
1765	CHEN, Kin Chan

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- [ ] applicant/inventor.
- [ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- [X] attorney or agent of record. Registration number 35,914
- [ ] attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____

Signature

Jeffrey D. Karceski
Typed or printed name

202.663.8403
Telephone number

December 7, 2006
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

[X] *Total of 1 forms are submitted.

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Attorney Docket: 071469-0307558
Client Reference: ES-038

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of:

HIGUCHI et al. Confirmation Number: 2682

Application No.: 10/812,347 Group Art Unit: 1765

Filed: March 30, 2004 Examiner: CHEN, Kin Chan

Title: PROCESSING SYSTEM AND METHOD FOR TREATING A SUBSTRATE

December 7, 2006

ATTACHMENT SHEETS TO PRE-APPEAL BRIEF CONFERENCE REQUEST

Mail Stop AF
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellants hereby request that a panel of examiners formally review the legal and factual basis of the rejections in the above-identified application prior to the filing of an appeal brief. Appellants assert that the outstanding rejections (now on appeal by virtue of the concurrently filed Notice of Appeal) are clearly improper based both upon errors in facts and the omission of essential elements required to establish a prima facie rejection (i.e., the prior art references fail to disclose, teach or suggest all the recited claim features).

APPEALED REJECTION

Appellants are appealing the rejection of claims 1-22 and 24-29, which rejections are detailed below. Appellants respectfully points out that claim 30 has been withdrawn from further consideration at this time. Accordingly, claim 30 is not included in the instant appeal.

Claims 1-22 and 24-29 were rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over Tomoyasu et al. (U.S. Patent Application Publication No. 2004/0185583). Claims 1, 4-8, 10-12, 15-19, 21, 22, and 24-28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Newton et al. (U.S. Patent Application

Publication No. 2004/0099377). The Examiner also rejected claims 1, 4-12, 15-22 and 24-29 under 35 U.S.C. § 103(a) as being unpatentable over Natzle et al. (U.S. Patent Application Publication No. 2004/0097047) in view of Newton et al. Finally, claims 2, 3, 13, and 14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Natzle et al. and Newton et al. and further in view of Doris et al. (U.S. Patent Application Publication No. 2004/0241981).

ARGUMENTS FOR TRAVERSAL

The appealed rejections are improper for two reasons. First, the Examiner has not presented a *prima facie* case of obviousness with respect to the claims. Second, the references do not describe or suggest all of the features combined by the claims. Accordingly, Appellants respectfully traverse the rejections set forth by the Examiner. To simplify the discussion of the claims, Appellants respectfully present arguments in connection with independent claims 1, 12, and 29. The arguments presented to the independent claims also apply to the dependent claims.

Before addressing the rejections, Appellants respectfully direct the Examiner's attention to M.P.E.P. § 2143, which states in relevant part: "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." Appellants also respectfully direct the Examiner's attention to M.P.E.P. § 2143.01 III, which states: "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." (Underlining emphasis in original.) M.P.E.P. § 2143.01 III further states: "Although a prior art device 'may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.'" Appellants respectfully submit that the references relied upon by the Examiner do not meet the requirements set forth above. At least for this reason, Appellants respectfully submit that a *prima facie* case of obviousness has not been made. Accordingly, Appellants respectfully request that the rejections be withdrawn.

As Appellants pointed out in the response filed on May 11, 2006, Tomoyasu et al. does not disclose or suggest a method for trimming a feature on a substrate that includes, among other features, adjusting the process recipe by setting an amount of an inert gas (claim 1) or selecting a target amount of inert gas for achieving the target trim amount (claim 12). Further still, Tomoyasu et al. does not disclose or suggest determining a relationship between a trim amount and an amount of an inert gas, wherein said relationship is established for an amount of a first process gas and a second process gas, which feature is recited by both claims 1 and 12. In addition, Tomoyasu et al. does not disclose or suggest that the relationship is determined via curve-fitting either the trim amount data as a function of the amount of the inert gas or the amount of the inert gas as a function of the trim amount data. It is Appellants' belief that the absence of any discussion or suggestion of at least these features in Tomoyasu et al. renders Tomoyasu et al. inapplicable to the claims of the present invention.

While paragraph [0074] of Tomoyasu et al. describes various modeling techniques, there is no discussion or suggestion of varying an amount of inert gas as a function of trim amount data, or vice versa. Tomoyasu et al. also does not disclose or suggest a method that includes determining a relationship between a trim amount and an amount of a first process gas, an amount of a second process gas, an amount of an inert gas, among other features, as recited by claims 1 and 12. The Applicant cautions that the mere discussion of different modeling techniques in Tomoyasu et al., by itself, would not lead those skilled in the art to the relationship(s) recited by the present claims. Appellants respectfully submit that the absence of any correlation between trim amount and an amount of inert gas, among other features, significantly undermines the rationale put forth by the Examiner to reject the claims.

Paragraphs [0200] – [0206] of Tomoyasu et al. discuss that the gas distribution system 1260 of the chemical treatment system 1220 distributes a process gas comprising two gases, for example NH_3, HF, H_2, O_2, CO, CO_2, Ar, He, etc. The gas distribution assembly 1422, including the first gas distribution plate 140 and the second gas distribution plate 1432, is not configured to distribute a first process gas, a second process gas, and an inert gas. Moreover, Appellants emphasize that Tomoyasu et al. does not describe or suggest using inert gas to control the amount of trim. Appellants respectfully point out that, simply because Tomoyasu et al. includes inert gases among those gases that may comprise the process gas, this fact by itself would not lead those skilled in the art to understand that Tomoyasu et al. can anticipate or render obvious claims 1 and 12.

With respect to claim 29, Tomoyasu et al. does not disclose or suggest that increasing the amount of argon corresponds to decreasing the trim amount. In paragraph [0195], Tomoyasu et al. describes the use of argon as a heat transfer gas supplied to the back-side of the substrate 1242. As noted above, in paragraph [0200], Tomoyasu et al. also describes the use of argon as a process gas. Tomoyasu et al., however, does not describe or suggest increasing the amount of argon to decrease the trim amount, nor does it describe introducing argon with NH_3. It is the absence of any connection between argon and a trim amount, either explicit or implicit, to which Appellants object. Accordingly, Appellants respectfully submits that Tomoyasu et al. cannot anticipate or render obvious claim 29.

In view of the foregoing, Appellants respectfully submit that Tomoyasu et al. simply does not describe or suggest those features upon which the Examiner relies in order to fashion a rejection of the claims presented by this application. Accordingly, Appellants respectfully request that the Examiner reconsider and withdraw the rejections over Tomoyasu et al.

The rejection of claims 1, 4-8, 10, 11 and 29 under 35 U.S.C. § 102(e) and claims 12, 15-19 and 21-28 under 35 U.S.C. § 103(a) over Newton et al. are similarly misplaced. Appellants respectfully point out that the Examiner's determination that it would have been obvious, after gathering information, to "tabulate/extrapolate/manipulate data and perform calculation using common statistical methods" fails to establish a *prima facie* case of obviousness because there is no suggestion or motivation by Newton et al. to do so, at least not in the manner recited by the claims in the instant application. Specifically, with respect to claim 29, Newton et al. does not disclose or suggest that increasing the amount of argon corresponds to decreasing the trim amount. Newton et al. also does not describe or suggest introducing argon with NH_3. At least for these reasons, therefore, Appellants respectfully submit that Newton et al. cannot anticipate or render obvious claim 29.

Newton et al.'s only suggestion of an inert gas occurs in paragraph [0074]. There, Newton et al. describes that the chamber 7 may optionally be provided with argon or N_2 gas. Appellants respectfully points out, however, that this discussion must be read the context of the disclosure of paragraph [0073], which describes that the thickness of the self-limiting etchable layer 50 is controlled by controlling the reaction temperature or the stoichiometry of the $HF:NH_3$ process gases. There is nothing in this brief discussion that would lead those skilled in the art to understand the nature of the relationship between the trim amount and the amount of an inert gas, among other features. As with Tomoyasu et al. it is the absence of a

discussion or suggestion of a connection between these parameters, among others, that Appellants believe undermine the rejection asserted by the Examiner. Accordingly, Appellants respectfully request that the Examiner withdraw the rejection.

Lastly, Appellants respectfully submits that the rejection of claims 1, 4-12 and 15-29 under 35 U.S.C. § 103(a) over Natzle et al. in view of Newton et al. and of claims 2, 3, 13 and 14 under 35 U.S.C. § 103(a) over Natzle et al. in view Newton et al. and further in view of Doris et al. are similarly misplaced. Simply, there is no discussion or suggestion in either Newton et al., Natzle et al., or Doris et al. that would lead those skilled in the art to "tabulate/extrapolate/manipulate data and perform calculation using common statistical methods," as suggested by the Examiner. As discussed above, this absence underlies Appellants assertion that the rejections cannot stand.

The dependent claims recite additional features and are, therefore, allowable at least for the same reasons discussed above with respect to claims 1, 12, and 29.

In view of the above amendments and remarks, Applicants respectfully submit that all the claims are allowable and that the entire application is in condition for allowance.

CONCLUSION

It is respectfully requested that the panel return a decision concurring with Applicant's position and eliminating the need to file an appeal brief because there are clear legal and/or factual deficiencies in the appealed rejections.

Respectfully submitted,

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